

What is claimed is:

1        1. A system for managing a communication network  
2 composed of a plurality of subnetworks, comprising:  
3            a plurality of element managers provided one for each  
4 of the plural subnetworks; and  
5            a network manager accommodating said plural element  
6 managers for concentrated management thereof;  
7            each of said plural element managers having a  
8 collection and notification section for collecting QoS  
9 (Quality of Service) capability management information on  
10 the corresponding element manager and notifying said  
11 network manager of the collected QoS capability management  
12 information;  
13            said network manager having  
14            a management section for concentratedly  
15 managing various QoS capabilities of the whole  
16 communication network, based on the QoS capability  
17 management information collected and notified by the  
18 individual element managers, and  
19            a request reception section for receiving a  
20 request for a target QoS capability, and  
21            a selection and notification section for  
22 selecting a candidate subnetwork having a QoS  
23 capability such as to satisfy the target QoS  
24 capability, for which the request has been received  
25 by said request reception section, based on the

26 various QoS capabilities being managed by said  
27 management section, and for notifying said element  
28 manager corresponding the selected candidate  
29 subnetwork of selection information indicating that  
30 the candidate subnetwork has been selected;  
31 each said element manager further having a control  
32 section for controlling the corresponding subnetwork based  
33 on the selection information notified by said selection and  
34 notification section of said network manager.

1 2. A system for managing a communication network  
2 composed of a plurality of subnetworks, comprising:  
3 a plurality of element managers provided one for each  
4 of the plural subnetworks for individual management  
5 thereof; and  
6 a network manager accommodating said plural element  
7 managers for concentrated management thereof;  
8 each of said plural element managers having a  
9 collection and notification section for collecting QoS  
10 (Quality of Service) capability management information on  
11 the corresponding element manager and notifying said  
12 network manager of the collected QoS capability management  
13 information;  
14 said network manager having  
15 a management section for concentratedly managing various  
16 QoS capabilities of the whole communication network, based  
17 on the QoS capability management information collected and

18 notified by the individual element managers.

1 ~~3.~~ An element manager for use in a communication  
2 network managing system, which manages a communication  
3 network composed of a plurality of subnetworks and includes  
4 a plurality of element managers corresponding to the plural  
5 subnetworks and a network manager accommodating the plural  
6 element managers, said element manager comprising:

7 a collection and notification section for collecting  
8 QoS (Quality of Service) capability management information  
9 to be used in managing the corresponding subnetwork, and  
10 for notifying the network manager of the collected QoS  
11 capability management information; and

12 a control section for controlling the corresponding  
13 subnetwork based on information which is obtained by the  
14 network manager having a function of concentratedly  
15 managing QoS capabilities of the communication network  
16 based on said QoS capability management information  
17 collected and notified by said collection and notification  
18 section and which is notified from the network manager on  
19 the candidate subnetwork having a QoS capability such as  
20 to satisfy a target QoS capability for the corresponding  
21 subnetwork.

1 ~~4.~~ An element manager for use in a communication  
2 network managing system, which manages a communication  
3 network composed of a plurality of subnetworks and includes



18 has been received by said request reception section, based  
19 on the various QoS capabilities being managed by said  
20 management section, and for notifying the element manager  
21 corresponding to the selected subnetwork of selection  
22 information that the candidate subnetwork has been  
23 selected.

1 ~~6.~~ A network manager for use in a communication  
2 network managing system which manages a communication  
3 network composed of a plurality of subnetworks and includes  
4 a plurality of element managers corresponding to the plural  
5 subnetworks, and a network manager accommodating the plural  
6 element managers,

7 wherein said network manager has a management section  
8 for concentratedly managing various QoS (Quality of  
9 Service) capabilities of the whole communication network,  
10 based on QoS capability management information of the  
11 corresponding subnetworks, which information has been  
12 collected and notified by the individual element managers.

1 7. A network manager for use in a communication  
2 network managing system according to claim 5, wherein said  
3 management section is constructed to concentratedly manage  
4 the various QoS capabilities of said communication network  
5 and those of another communication network independent of  
6 the last-named communication network in view of also QoS  
7 capability management information of other subnetworks

8 that constitute said another communication network.

1 8. A network manager for use in a communication  
2 network managing system according to claim 5, wherein said  
3 management section is constructed to manage supported  
4 tagging, as additional information, for discrimination on  
5 combination of the subnetworks.

1 9. A network manager for use in a communication  
2 network managing system according to claim 5, wherein said  
3 management section is constructed to update the various QoS  
4 capabilities of the communication network when said QoS  
5 capability management information is updated.

1 10. A network manager for use in a communication  
2 network managing system according to claim 5, wherein said  
3 selection and notification section is constructed to  
4 previously select two or more of the subnetworks when  
5 selecting the candidate subnetworks having communication  
6 QoS capabilities such as to individually satisfy the target  
7 QoS capability, for which the request has been received by  
8 said request reception section, to firstly notify one  
9 element manager, corresponding to a first one of the  
10 candidate subnetworks, of the previous selection of the  
11 plural subnetworks and secondly notify another element  
12 manager, corresponding to a second one of the candidate  
13 subnetworks, of unable information that the corresponding

14 subnetwork cannot be controlled, upon receipt of the unable  
15 information as a response from the element manager  
16 corresponding to the first candidate subnetwork.

1 11. A network manager for use in a communication  
2 network managing system according to claim 5, wherein said  
3 selection and notification section is constructed to select  
4 two or more of the subnetworks according to preset  
5 priorities when selecting the candidate subnetworks having  
6 QoS capabilities such as to individually satisfy the target  
7 QoS capability, for which the response has been received  
8 by said request reception section, and to notify one element  
9 manager, corresponding to a higher-priority one of the  
10 candidate subnetworks, of the selection.

1 ~~12.~~ A computer-readable recording medium in which  
2 a program is recorded for instructing a computer to be used  
3 in a communication network management system including a  
4 plurality of element managers corresponding to a plurality  
5 of subnetworks that constitute a communication network, and  
6 a network manager accommodating the plural element managers,  
7 wherein said program instructs said computer to function  
8 as the following:

9 collecting and notifying means for collecting QoS  
10 (Quality of Service) capability management information on  
11 the corresponding element manager and notifying said  
12 network manager of the collected QoS capability management



2 a program is recorded for instructing a computer to be used  
3 in a communication network managing system including a  
4 plurality of element managers corresponding to a plurality  
5 of subnetworks that constitute a communication network, and  
6 a network manager accommodating the plural element managers,  
7 wherein said program instructs said computer to function  
8 as the following:

9 managing means for concentratedly managing various  
10 QoS (Quality of Service) capabilities of the whole  
11 communication network, based on QoS capability management  
12 information of the corresponding subnetworks, which  
13 information is collected and notified by the individual  
14 element managers;

15 request receiving means for receiving a request for  
16 target QoS capability; and

17 selecting and notifying means for selecting a  
18 candidate subnetwork having a QoS capability such as to  
19 satisfy the target QoS capability, for which the request  
20 has been received by said request receiving means, based  
21 on the QoS capabilities being managed by said managing means,  
22 and for notifying the element manager corresponding the  
23 selected subnetwork of selection information that the  
24 candidate subnetwork has been selected.

1 15. A computer-readable recording medium in which  
2 a program is recorded for instructing a computer to be used  
3 in a communication network management system including a





